

Remarks

Claims 22-43 were pending in the subject application. By this Amendment, claims 22-36 and 41 have been amended. No new matter has been added by these amendments. Support for the amendments to the claims can be found throughout the original specification (see, for example; page 2, lines 13-15; page 6, lines 24-26; page 6, line 30 through page 7, line 1; and page 7, lines 6-9). Accordingly, claims 22-43 are before the Examiner for consideration.

The amendments to the claims have been made in an effort to lend greater clarity to the claimed subject matter and to expedite prosecution. The amendments should not be taken to indicate the applicants' agreement with, or acquiescence to, the rejection of record. Favorable consideration of the claims now presented, in view of the remarks and amendments set forth herein is earnestly solicited.

Claim 41 has been rejected under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, for failing to set forth any method steps. By this Amendment, claim 41 has been amended to recite that "the molecules or atoms are directed into a chamber", and that "the molecules or atoms are directed from the outlet [of the chamber] to a miniaturized separation column." The applicants submit that claim 41, as currently presented, sets forth method steps. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

Claim 41 has also been rejected under 35 U.S.C. §101 for failing to set forth any method steps. As discussed above, claim 41 has been amended to recite that "the molecules or atoms are directed into a chamber," and that "the molecules or atoms are directed from the outlet [of the chamber] to a miniaturized separation column." The applicants submit that claim 41, as currently presented, sets forth method steps. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 USC §101.

Claims 22-26, 34-35, and 41-43 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Bakajin *et al.* (U.S. Patent No. 7,290,667) in view of Mayer *et al.* (U.S. Patent No. 6,763,710). The applicants respectfully request reconsideration.

By this Amendment, claim 22 has been amended to recite a "miniaturized gas chromatograph comprising a miniaturized separation column and a miniaturized device," and also "wherein the

outlet of the chamber is directly connected to the separation column of the gas chromatograph.” These advantageous features of the subject invention are discussed throughout the specification (see, for example, page 6, line 30 through page 7, line 1). In contrast, neither the Bakajin *et al.* reference nor the Mayer *et al.* reference discloses or suggests a miniaturized gas chromatograph including a miniaturized separation column and a miniaturized device. Thus, the combination of cited references also necessarily fails to teach the limitation that an outlet of a chamber of the device is directly connected to the separation column of the gas chromatograph.

Moreover, the applicants respectfully submit that a skilled artisan would not have had a reason to modify the combination of Bakajin *et al.* and Mayer *et al.* to arrive at a miniaturized gas chromatograph comprising a miniaturized separation column and a miniaturized device, wherein an outlet of a chamber of the device is directly connected to the separation column of the gas chromatograph. Neither reference pertains to filtering or concentrating atoms in order to perform an analysis in a separation column of a gas chromatograph. In fact, nowhere in the combination of cited references does the phrase “separation column” even appear.

Also, by this Amendment, independent claim 41 has been amended to recite that “the molecules or atoms are directed from the outlet [of the chamber] to a miniaturized separation column.” As discussed above, neither cited reference pertains to filtering or concentrating atoms in order to perform an analysis in a separation column of a gas chromatograph. Additionally, the combination of cited references fails to even mention use of a separation column, let alone directing molecules or atoms from the outlet of a chamber to a miniaturized separation column.

Thus, the cited references, either taken alone or in combination, do not teach or suggest certain features of the claimed invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) based on Bakajin *et al.* and Mayer *et al.*

Claims 27-33 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over unpatentable over Bakajin *et al.* in view of Mayer *et al.* as applied to claims 22-26, 34-35, and 41-43 above, and further in view of Gordon (U.S. Patent No. 5,954,860). The applicants respectfully request reconsideration.

The deficiencies of the combination of Bakajin *et al.* and Mayer *et al.* have been discussed above. Gordon does not cure these deficiencies. Specifically, there is no teaching or suggestion in the combination of cited references of a miniaturized gas chromatograph including a miniaturized separation column and a miniaturized device, wherein an outlet of a chamber of the device is directly connected to the separation column of the gas chromatograph.

Accordingly, the applicant respectfully requests reconsideration and withdrawal of the rejection under 35 USC §103(a) based on Bakajin *et al.*, Mayer *et al.*, and Gordon.

Claims 36-40 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Bakajin *et al.* in view of Bailey *et al.* (U.S. Patent No. 5,569,501). The applicants respectfully request reconsideration.

By this Amendment, claim 36 has been amended to recite “a process for the production of a miniaturized gas chromatograph comprising a miniaturized separation column and a miniaturized device,” including the steps of “manufacturing the miniaturized separation column using microsystem technology” and “connecting one of the openings [of a carrier] to the inlet of the separation column.” In contrast, neither the Bakajin *et al.* reference nor the Bailey *et al.* reference discloses or suggests a process for the production of a miniaturized gas chromatograph including a miniaturized separation column and a miniaturized device. Thus, the combination of cited references also necessarily fails to teach the steps of manufacturing the miniaturized separation column using microsystem technology and connecting an opening of a carrier to the inlet of the separation column.

Moreover, the applicants respectfully submit that a skilled artisan would not have had a reason to modify the combination of Bakajin *et al.* and Bailey *et al.* to arrive at the claimed method. Neither reference pertains to filtering or concentrating atoms in order to perform an analysis in a separation column of a gas chromatograph. In fact, nowhere in the combination of cited references does the phrase “separation column” even appear.

Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejections under 35 USC §103(a) based on Bakajin *et al.* and Bailey *et al.*

In view of the foregoing remarks and the amendment above, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicants also invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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